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**Stulen**

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(54) **ULTRASONIC SURGICAL INSTRUMENTS**

(56) **References Cited**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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See application file for complete search history.

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(57)

**ABSTRACT**

An ultrasonic surgical blade comprising a body having a proximal end and a distal end. The distal end of the body is movable relative to a longitudinal axis by vibrations produced by a transducer. The body comprises a longitudinally extending bore formed within the ultrasonic surgical blade. The ultrasonic surgical blade is configured to emit a spray from the bore at the distal end thereof to substantially prevent fluid from contacting the distal end of the ultrasonic surgical blade.

**23 Claims, 21 Drawing Sheets**

